

ORDER NO. ITD0604015CE

Service Manual

U/V Tuner Board with Hospitality Port TY-FB8TA



SPECIFICATIONS

Specifications

Receiving System

IT Systems	Function
1 PAL B, G, H	Reception of broadcast transmissions and Playback from Video
2 PAL I	
3 PAL D, K	Cassette Tape Recordings
4 SECAM B, G	
5 SECAM D, K	
6 SECAM K1	
7 NTSC M (NTSC 441k) ± 6MHz	
8 NTSC 441k ± 6MHz	Playback from Special VCR's or DVD
9 NTSC 441k ± 6MHz	

Receiving Channels

Regular TV

VHF BAND

2-12 (PAL/SECAM B, K1)

0-12 (PAL B AUST.)

1-9 (PAL B N.Z)

1-12 (PAL/SECAM D)

1-12 (NTSC M Japan)

2-13 (NTSC M U.S.A.)

UHF BAND

21-69 (PAL G, H, I/SECAM G, K, K1)

28-69 (PAL B AUST.)

13-57 (PAL D, K)

13-62 (NTSC M Japan)

14-69 (NTSC M U.S.A.)

CATV

S1-S20 (OSCAR)

1-125 (U.S.A. CATV)

C13-C49 (JAPAN)

S21-S41 (HYPER)

Z1-Z37 (CHINA)

5A, 9A (AUST.)

OUTPUT

AUDIO OUT

AUDIO L-R (RCA Pin Type × 2)

0.5 Vrms

VIDEO OUT

VIDEO (BNC Type)

1.0 Vp-p (75 Ω)

Others

Ir System terminal × 1

INPUT

AUDIO IN

AUDIO L-R (RCA Pin Type × 2)

0.5 Vrms

VIDEO IN	VIDEO (BNC Type)	1.0 Vp-p (75)
	S-VIDEO (MINI DIN 4-pin)	Y:1.0 Vp-p (75) C:0.286 Vp-p (75)
ANT-IN	UHF / VHF	
Mass (Weight)	0.55 kg	

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⚠ WARNING

This service information is designed for experienced service personnel only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential danger in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced service personnel. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

1. Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in **Figure 1**.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUGH CURRENT) expressed as voltage U_1 and U_2 , does not exceed the following values:

For a. c.: $U_1 = 35 \text{ V}$ (peak) and $U_2 = 0.35 \text{ V}$ (peak);

For d. c.: $U_1 = 1.0 \text{ V}$,

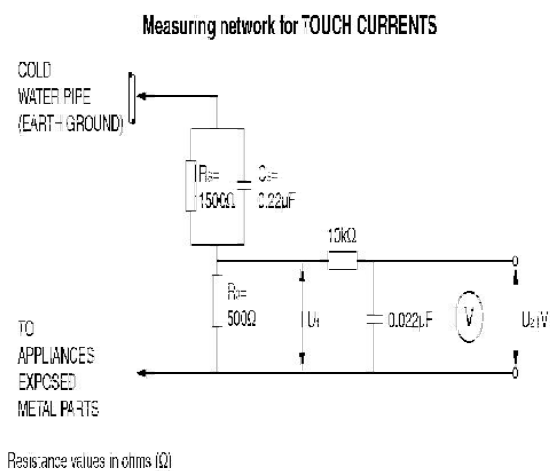
Note:

The limit value of $U_2 = 0.35 \text{ V}$ (peak) for a. c. and $U_1 = 1.0 \text{ V}$ for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

The limit value $U_1 = 35 \text{ V}$ (peak) for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz .

7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Figure 1



2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution
Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

3. About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in its manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

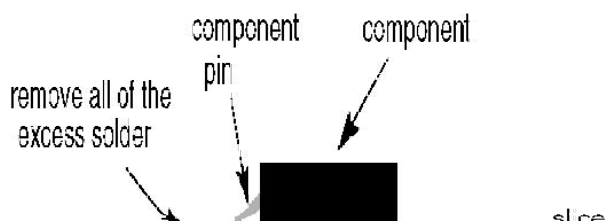
PCBs manufactured using lead free solder will have the PbF within a leaf Symbol stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40°C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).

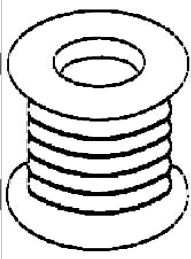
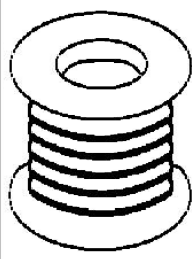
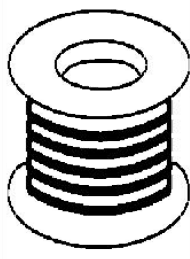
If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

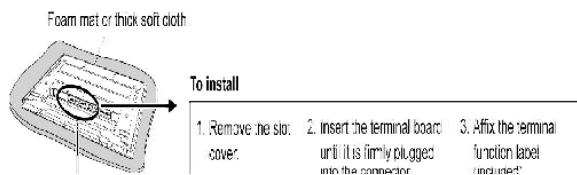
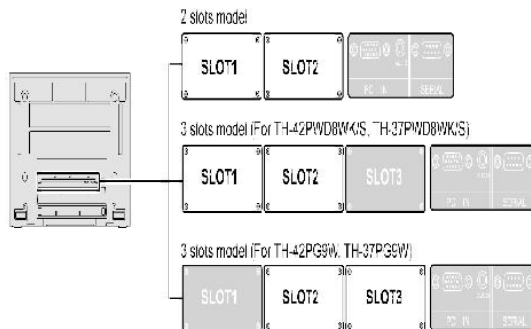
0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

4. Installation

Precautions

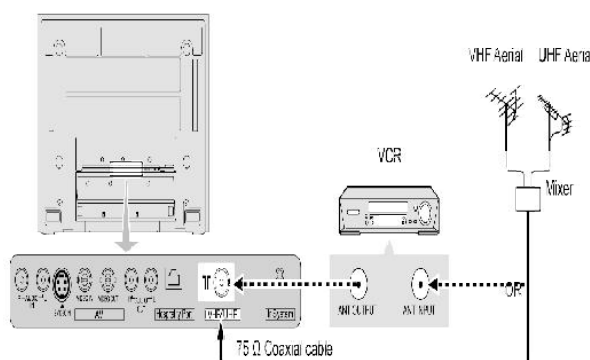
- **Before installation**
Turn the power switch off and disconnect the power supply plug of the unit. Disconnect all other plugs connected to the unit.
- **Before removing**, turn the power off with the tuner board's remote control and then turn the main power of the unit off.
- **When installing or removing the terminal board**, exercise care to avoid injury.
There may be some sharp-pointed solder joints on the rear side of the board that could cause unexpected injury.
- **When installing the board**, fully insert the Board into the slot horizontally until it is firmly plugged into the connector.
Note that incomplete insertion may damage the internal components.

Compatible slot Nos. are SLOT1 and SLOT2.



5. Antenna connection

For proper reception of VHF / UHF channels, an external antenna is required. For best reception, an outdoor antenna is recommended.

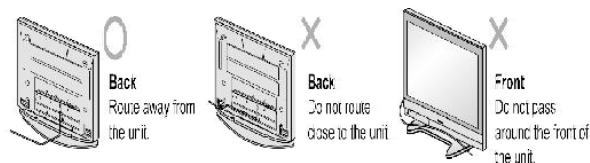


Notes:

- Do not put the Coaxial cable close to the Power cable to avoid noise.
- Do not place the Coaxial cable under the unit.
- Additional equipment, cables and adapter plugs shown are not supplied with this set.
- To obtain optimum quality picture and sound, an Aerial, the correct cable (75 Ω coaxial), and the correct terminating plug are required.
- If a communal Aerial system is used, you may require the correct connection cable and plug between the wall Aerial socket and your set.
- Your local Television Service Centre or Dealer may be able to assist you in obtaining the correct Aerial system for your particular area and the accessories required.
- Any matters regarding Aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of you, the Customer.

Handling the antenna cable

To avoid noise in the video, hold the antenna cable correctly.



6. Connections of external equipment

It is possible to connect a variety of additional equipment to this set. The following pages detail how to connect external equipment to the set.

Once your equipment is connected, use the following procedure to view the input:

Press the TV/AV button.

→ TV → AV → PC IN → Input1 →

(For PWD8 series)

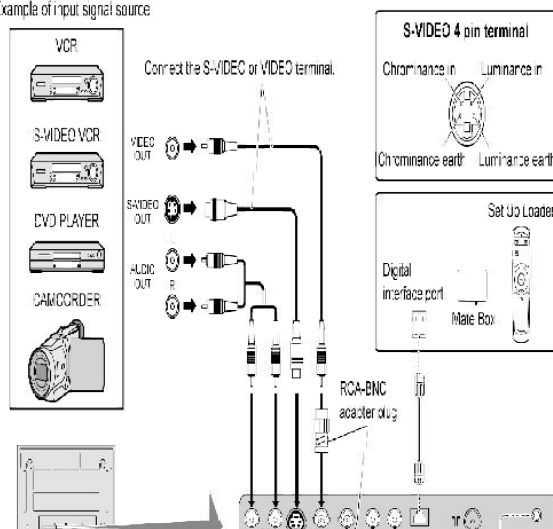
→ TV → AV → Input3 → PC IN →

Notes:

- Additional equipment and cables shown are not supplied with this set.
- This Video out terminal is available for S-Video signal.
- S-video signal input (S VIDEO IN) is prior to composite signal input (VIDEO IN).
- A light gun game console using CRT TV's electron-gun scanning system is not compatible with a unit.
- VIDEO OUT is available only when "AV" is selected as the input source for TV/AV (INPUT1 for PWD8 series).



Example of input signal source:



7. Circuit Board Layout

7.1. HCA-Board

8. Block and Schematic Diagram

8.1. Schematic Diagram Notes

Important Safety Notice
 Components in this system are not flame retardant and should not be used in fire-rated walls.
 After installing any of these components, use of fire retardant is required.

1. **Resistor**
The electrical **resistance** that opposes the flow of electric current.
2. **Capacitor**
The electronic device that stores electrical energy.
3. **Inductor**
The electronic device that stores energy in a magnetic field.
4. **Resistor**
The electronic device that opposes the flow of electric current.
5. **Capacitor**
The electronic device that stores electrical energy.
6. **Inductor**
The electronic device that stores energy in a magnetic field.
7. **Resistor**
The electronic device that opposes the flow of electric current.
8. **Capacitor**
The electronic device that stores electrical energy.
9. **Inductor**
The electronic device that stores energy in a magnetic field.
10. **Resistor**
The electronic device that opposes the flow of electric current.

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The Power Components control area also has a separate power control interface to the system controller.

The channels are set by HPI and OEL and are not a continuous signal, but are in two main components.

4 channels accept the Power Channel output.

Procedures

1. The following are the steps to be followed for the control and monitoring of the Power Components control area.
2. The following are the steps to be followed for the control and monitoring of the Power Components control area.

8.2. HCA-Board Block Diagram

8.3. HCA-Board (1 of 6) Schematic Diagram

8.4. HCA-Board (2 of 6) Schematic Diagram

- 8.5. HCA-Board (3 of 6) Schematic Diagram
- 8.6. HCA-Board (4 of 6) Schematic Diagram
- 8.7. HCA-Board (5 of 6) Schematic Diagram
- 8.8. HCA-Board (6 of 6) Schematic Diagram

9. Replacement Parts List

9.1. Replacement Parts List Notes

Important Safety Notice

Components identified by **A** mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking RTL indicates that the Retention Time is Limited for this item.
After the discontinuation of the assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing pertinent product retention.
After the end of this period, the assembly will no longer be available.

Abbreviation of part name and description

1. Resistor	2. Capacitor
Example:	Example:
BRD25TJ04 Ⓢ 100KOHM Ⓢ 14W	EOXF1H002F Ⓢ 0.01UF Ⓢ 50V
Type Allowance	Type Allowance

9.2. Electrical Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3300	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3301	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3302	ECJ2VF1H103Z	C 0.010UF, Z, 50V	1	
C3303	ECJ2XB1E104K	C 0.1UF, K, 25V	1	
C3304,05	ECJ2XC1H560J	C 56PF, J, 50V	2	
C3306	ECJ2XB1E104K	C 0.1UF, K, 25V	1	
C3307	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3308	EEVHB1C471	E 470UF, 16V	1	
C3309,10	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C3311,12	EEEHP1A100R	E 10UF, 10V	2	
C3313	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3314	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3315	EEEHP1A100R	E 10UF, 10V	1	
C3316	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3317	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3318	EEHBB1C470P	C 47PF, J, 16V	1	
C3319	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3320	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3321	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3322	EEVHP1C100R	E 10UF, 16V	1	
C3325	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3326	ECJ1VC1H560J	C 56PF, J, 50V	1	
C3327	ECJ1VC1H100C	C 10PF, C, 50V	1	
C3328	ECJ1XC1H220J	C 22PF, J, 50V	1	
C3329	ECJ1XC1H470J	C 47PF, J, 50V	1	
C3331	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3332,33	ECJ1VC1H010C	C 1PF, C, 50V	2	
C3334	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3335	ECJ1XC1H470J	C 47PF, J, 50V	1	
C3337,38	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3339	EEVHB1C100R	E 10UF, 16V	1	
C3340	ECJ1VC1H560J	C 56PF, J, 50V	1	
C3341	ECJ1XC1H180J	C 18PF, J, 50V	1	
C3342	ECJ1XC1H151J	C 150PF, J, 50V	1	
C3343	ECJ1XC1H220J	C 22PF, J, 50V	1	
C3344	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3345	EEHBB0J101P	C 100PF, J, 6.3V	1	
C3346,47	ECJ1XB0J105K	C 1UF, K, 16V	2	
C3348	EEHBB1H3R3R	C 3.3PF, J, 50V	1	
C3349	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3350	ECJ3XB0J106M	C 10UF, M, 6.3V	1	
C3351	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3352	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3353,54	EEVHB1C100R	E 10UF, 16V	2	
C3355	EEVHB1C470P	E 47UF, 16V	1	
C3356	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3357	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3358	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3359	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3360,61	ECJ1VF1A105Z	C 1UF, Z, 10V	2	
C3362	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3363	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3364	EEVHB1C470P	E 47UF, 16V	1	
C3365	ECJ1XC1H680J	C 68PF, J, 50V	1	
C3367	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3368	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3369	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3370	ECJ1XC1H680J	C 68PF, J, 50V	1	
C3371	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3372	F2H0G470A005	E 47UF, 50V	1	
C3373	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3375-77	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C3378-84	ECJ1XB1C104K	C 0.1UF, Z, 16V	7	
C3385	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3386,87	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3388,89	ECJ1XB0J105K	C 1UF, K, 16V	2	
C3390	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3391	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3392,93	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3394	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3395	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3396	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3397	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3398	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3399	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3400	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3401	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3402,03	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3405	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3406	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3407	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3408-18	ECJ1XF1C104Z	C 0.1UF, Z, 16V	11	
C3419	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3420	EEVHB0G221P	E 220UF, 4V	1	
C3421	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3422	ECJ1VB1C103K	C 0.010UF, K, 16V	1	
C3423	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3424	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3425	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3426	ECJ1XC1H150J	C 15PF, J, 50V	1	
C3427	ECJ1XC1H101J	C 100PF, J, 50V	1	
C3428	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3429	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3430	ECJ1XC1H180J	C 18PF, J, 50V	1	
C3431	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3438	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3442,43	ECJ1VF1A105Z	C 1UF, Z, 10V	2	
C3444-47	ECJ1XB1C104K	C 0.1UF, Z, 16V	4	
C3448-50	ECJ3XB0J106M	C 10UF, M,6.3V	3	
C3451,52	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3453-55	ECJ1XC1H390J	C 39PF, J, 50V	3	
C3456	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3458	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3460	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3461-63	ECJ1XB1C104K	C 0.1UF, Z, 16V	3	
C3465	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3466	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3467	F2H0G470A005	E 47UF, 50V	1	
C3468	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3469	EEVHB0G101R	E 100UF 4V	1	
C3471	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3472-75	ECJ1XB0J105K	C 1UF, K, 16V	4	
C3477,78	ECJ1XC1H102J	C 1000PF, J, 50V	2	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3479,80	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3481-85	ECJ1XC1H102J	C 1000PF, J, 50V	5	
C3486	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3487	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3488,89	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3490	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3493-96	ECJ1XB0J105K	C 1UF, K, 16V	4	
C3497	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3498	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3499	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3500	EEVHB0G221P	E 220UF, 4V	1	
C3501	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3502	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3505	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3506	EEVHB0G221P	E 220UF, 4V	1	
C3508	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3509	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3510	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3511	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3512	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3513	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3514	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3515	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3516	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3517	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3518	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3519	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3520	EEEBB1C470P	C 47PF, J, 16V	1	
C3521	EEEBB1C220R	C 22PF, J, 16V	1	
C3522,23	ECJ1XC1H220J	C 22PF, J, 50V	2	
C3524	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3525	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3529	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3530	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3531	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3532	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3533	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3534	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3535	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3536	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3537	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3539	ECJ3XB0J106M	C 10UF, M,6.3V	1	
C3540	EEVHB0G221P	E 220UF, 4V	1	
C3541,42	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3543	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3544	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3545	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3546	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3547	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3548,49	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3550	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3551,52	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3553	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3554	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3555	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3556	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3557	ECJ1XC1H102J	C 1000PF, J, 50V	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3558,59	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3564	ECJ1XC1H101J	C 100PF, J, 50V	1	
C3565	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3567-69	ECJ1XB0J105K	C 1UF, K, 16V	3	
C3570,71	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3572-75	ECJ1XB0J105K	C 1UF, K, 16V	4	
C3576	ECJ1VB0J334K	C 0.33UF, K, 6.3V	1	
C3577	ECJ1VB1H682K	C 6800PF, K, 50V	1	
C3578	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3579-81	ECJ1VB1H103K	C 0.001UF, K, 50V	3	
C3582	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3583	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3584	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3585	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3586	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3587	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3588	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3589	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3590	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3591	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3594	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3595	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3596	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3597	ECJ1XC1H471J	C 470PF, J, 50V	1	
C3598	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3599,00	ECJ1VB1H103K	C 0.001UF, K, 50V	2	
C3601-04	ECJ1XB0J105K	C 1UF, K, 16V	4	
C3605	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3606	ECJ1XB0J105K	C 1UF, K, 16V	1	
C3607	ECJ1XC1H121J	C 120PF, J, 50V	1	
C3608	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3611	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3612-19	ECJ1VB1H103K	C 0.001UF, K, 50V	8	
C3620	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3621	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3622	ECJ1VB0J225K	C 2.2UF, K, 6.3V	1	
C3623	EEVHB0G221P	E 220UF, 4V	1	
C3625	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3626	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3627	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3628	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3629	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3630	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3631	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3632	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3633	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3634-41	ECJ1VB1H103K	C 0.001UF, K, 50V	8	
C3642	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3643	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3644	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3645	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3646	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3647	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3648	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3649	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3650	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3651	ECJ1VB1H103K	C 0.001UF, K, 50V	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3652	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3653,54	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3655	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3656,57	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3658,59	ECJ1XC1H102J	C 1000PF, J, 50V	2	
C3660	EEVHB0G101R	E 100UF 4V	1	
C3661	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3662	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3663-65	ECJ1VB1H103K	C 0.001UF, K, 50V	3	
C3666	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3667	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3668	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3669	ECJ1VF1H104Z	C 0.1UF, Z, 50V	1	
C3671,72	ECJ1VF1A105Z	C 1UF, Z, 10V	2	
C3679-81	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C3682	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3683	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3684-86	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C3687	EEVHB0G221P	E 220UF, 4V	1	
C3688	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3689	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3690,91	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3692	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3693	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3694	ECJ1XC1H151J	C 150PF, J, 50V	1	
C3696	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3697	ECJ1XC1H220J	C 22PF, J, 50V	1	
C3698	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3699	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3700	ECJ1XC1H220J	C 22PF, J, 50V	1	
C3701	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3703	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3704	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3706	EEVHB1C100R	E 10UF, 16V	1	
C3707,08	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3710	ECJ1XC1H102J	C 1000PF, J, 50V	1	
C3711-13	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C3714,15	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3718	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3719	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3720	ECJ1VB1H103K	C 0.001UF, K, 50V	1	
C3721	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3722	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3723,24	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3725	EEVHB0G101R	E 100UF 4V	1	
C3726	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3727	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3728,29	ECJ1XC1H271J	C 270PF, J, 50V	2	
C3730	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3731	ECJ1XC1H271J	C 270PF, J, 50V	1	
C3732	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3733,34	ECJ1XC1H271J	C 270PF, J, 50V	2	
C3735,36	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3737-41	ECJ1XF1C104Z	C 0.1UF, Z, 16V	5	
C3742	EEVHB0J101P	C 100PF, J, 6.3V	1	
C3743,44	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C3745-48	ECJ1XF1C104Z	C 0.1UF, Z, 16V	4	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3749	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C3752	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3753	ECJ2VF1H103Z	C 0.010UF, Z, 50V	1	
C3754	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3755	EEH1B1V470P	E 47UF, 35V	1	
C3757	ECJ2XB1H472K	C 4700PF, K, 50V	1	
C3758	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3759,60	ECJ1XC1H102J	C 1000PF, J, 50V	2	
C3761	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C3762	EEVHB1C470P	E 47UF, 16V	1	
C3763	ECJ1VB1C103K	C 0.010UF, K, 16V	1	
C3764	ECJ3XF1C475Z	C 4.7UF, Z, 16V	1	
C3765,66	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3767	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C3768	EEVHB0J470R	E 47UF, 6.3V	1	
C3770	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C3771	ECJ2XB1H271K	C 270PF, K, 50V	1	
C3772	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3774	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3776	ECJ1XC1H221J	C 220PF, J, 50V	1	
D3300	MA3100M	ZENER DIODE	1	
D3301	MA152K	DIODE	1	
D3302	LNJ107W5PRW	LED	1	
D3303-06	B0JCME000037	DIODE	4	
D3307	MA111	DIODE	1	
D3308	MA157A	DIODE	1	
D3309,10	MA152	DIODE	2	
FL3300,01	ELKE103FA	NOISE FILTER	2	
FL3302,03	J0HABB000004	LC FILTER	2	
FL3304	J0HABB000003	LC FILTER	1	
FL3305-08	J0HABB000004	LC FILTER	4	
FL3311-14	ELKE103FA	NOISE FILTER	4	
FL3315,16	J0HABB000004	LC FILTER	2	
H1	K1KA80B00037	80P CONNECTOR	1	
H3	K1KA07AA0150	7P CONNECTOR	1	
H4	K1KA08AA0150	8P CONNECTOR	1	
IC3300	C1AB00002281	IC	1	
IC3301	C1AB00001834	IC	1	
IC3302	CXA2089Q	LINEAR IC	1	
IC3303,04	C0CBCAD00012	IC	2	
IC3305	C1AB00002165	IC	1	
IC3306	C0CBCAD00012	IC	1	
IC3307	C0JBAB000620	IC	1	
IC3308	C0CBCBD00008	IC	1	
IC3310	C0JBAZ002186	IC	1	
IC3312	C0CBCBD00008	IC	1	
IC3313	C0CBCAD00015	IC	1	
IC3315	C3ABPJ000065	IC	1	
IC3317	C3ABPJ000065	IC	1	
IC3318	C0ZBZ0000967	IC	1	
IC3319	TVRN983	IC	1	
IC3320	JLC1562BF	MOS IC (MICON LSI)	1	
IC3321	C2CBYF000031	IC	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC3322	TVRN804	IC	1	
IC3323	C0EBE0000120	IC	1	
IC3324	C0JBBZ000281	IC	1	
IC3325	C0JBAB000591	IC	1	
IC3326	C0JBAE000231	IC	1	
IC3327	C3ABPG000133	IC	1	
IC3328	TVRN803	IC	1	
IC3329	C0DBZHE00019	IC	1	
IC3330	C0DBEZE00006	IC	1	
IC3331	C0CBAYG00011	IC	1	
IC3332	C0CBCBD00008	IC	1	
IC3333	C0DBAZE00008	IC	1	
IC3334	C0DBAMA00015	IC	1	
IC3335	C1AB00001942	IC	1	
IC3336	C0JBAB000620	IC	1	
IC3338	C0ZBZ0000911	IC	1	
IC3340	C0JBAS000128	IC	1	
JK3300	K1QBB2AB0005	CONNECTOR	1	
JK3301	K1CB106B0027	CONNECTOR	1	
JK3302	K2HA204B0097	JACK	1	
JK3303	K2HC103B0105	JACK	1	
JK3304	K2HA204B0097	JACK	1	
JK3305	K2LC108B0063	JACK	1	
JS3300-05	ERJ3GEY0R00	M 0 OHM, 1/16W	6	
JS3308,09	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
JS3312	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
JS3316	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
L3300,01	EXC3BB102H	BEAD CHOKE	2	
L3302	TSK1040	FERRITE CORE	1	
L3304	ELJFA6R8MFB	CHIP INDUCTOR	1	
L3305,06	G1C330K00017	INDUCTOR COIL	2	
L3307	TALC168T6R8K	CHIP INDUCTOR COIL	1	
L3310	TALC168T100K	CHIP INDUCTOR COIL	1	
L3311	J0JHC0000078	CHIP INDUCTOR	1	
L3313	TALC168T100K	CHIP INDUCTOR COIL	1	
L3314	J0JCC0000241	CHIP INDUCTOR	1	
L3315	J0JHC0000078	CHIP INDUCTOR	1	
L3316,17	J0JCC0000241	CHIP INDUCTOR	2	
L3319	J0JGC0000021	CHIP INDUCTOR COIL	1	
L3320,21	EXC3BB102H	BEAD CHOKE	2	
L3325	EXC3BB102H	BEAD CHOKE	1	
L3328	J0JCC0000241	CHIP INDUCTOR	1	
L3329	J0JHC0000078	CHIP INDUCTOR	1	
L3331,32	J0JHC0000078	CHIP INDUCTOR	2	
L3334	J0JCC0000241	CHIP INDUCTOR	1	
L3336,37	J0JCC0000241	CHIP INDUCTOR	2	
L3339	J0JCC0000241	CHIP INDUCTOR	1	
L3340	TALC168T100K	CHIP INDUCTOR COIL	1	
L3342,43	J0JHC0000078	CHIP INDUCTOR	2	
L3346	G1C330K00017	INDUCTOR COIL	1	
L3348	ELJFA8R2KFB	CHIP INDUCTOR	1	
L3350	J0JGC0000021	CHIP INDUCTOR COIL	1	
L3351-53	J0JHC0000078	CHIP INDUCTOR	3	
L3354	G1C101M00018	INDUCTION COIL	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L3356	G1C220MA0077	INDUCTOR COIL	1	
L3359,60	EXC3BB102H	BEAD CHOKE	2	
L3361	J0JHC0000078	CHIP INDUCTOR	1	
Q3300	2SB709A	TRANSISTOR	1	
Q3301	2SD601A	TRANSISTOR	1	
Q3302,03	2SB709A	TRANSISTOR	2	
Q3304-07	2SD601A	TRANSISTOR	4	
Q3309,10	2SB709A	TRANSISTOR	2	
Q3311	2SD1030	TRANSISTOR	1	
Q3312	2SD601A	TRANSISTOR	1	
Q3313,14	UN5211	TRANSISTOR	2	
Q3315	2SB709A	TRANSISTOR	1	
Q3317	2SD601A	TRANSISTOR	1	
Q3318-20	2SB709A	TRANSISTOR	3	
Q3321-23	2SD601A	TRANSISTOR	3	
Q3324,25	2SB709A	TRANSISTOR	2	
Q3326-28	2SD601A	TRANSISTOR	3	
Q3329	UN5211	TRANSISTOR	1	
Q3330	B1ABPF000010	TRANSISTOR	1	
Q3331	UN2211	TRANSISTOR	1	
Q3332,33	UN5211	TRANSISTOR	2	
Q3334,35	2SB709A	TRANSISTOR	2	
Q3336	2SD601A	TRANSISTOR	1	
Q3339	UN5211	TRANSISTOR	1	
R3300	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3301,02	ERJ3GEYJ184	M 180KOHM,J,1/16W	2	
R3303	ERJ6ENF75R0	M 75 OHM, 1/10W	1	
R3305-07	ERJ6ENF75R0	M 75 OHM, 1/10W	3	
R3308	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R3310-12	ERJ3GEYJ101	M 100 OHM,J,1/16W	3	
R3313	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R3314,15	ERJ3GEYJ102	M 1KOHM,J,1/16W	2	
R3316	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R3317	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3318	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R3319,20	ERJ3GEYJ102	M 1KOHM,J,1/16W	2	
R3321	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R3322	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3323	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R3324	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R3325	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3327	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3328	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3329	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3330	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3331	ERJ8GEYJ390	M 39 OHM, J,1/8W	1	
R3332,33	ERJ3GEYJ151	M 150 OHM,J,1/16W	2	
R3334	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3336	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3337	ERJ3GEYJ182	M 1.8KOHM,J,1/16W	1	
R3338	ERJ3GEYJ332	M 3.3KOHM,J,1/16W	1	
R3339	ERJ6GEYJ331	M 330 OHM,J,1/10W	1	
R3340	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3341	ERJ6GEYJ331	M 330 OHM,J,1/10W	1	
R3342,43	ERJ3GEYJ332	M 3.3KOHM,J,1/16W	2	

10000000	10000000	10000000	10000000	10000000
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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3344	ERJ3GEYJ122	M 1.2KOHM,J,1/16W	1	
R3345	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3346	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3348	ERJ3GEYJ561	M 560 OHM,J,1/16W	1	
R3349	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3350	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3351,52	ERJ3GEYJ221	M 220 OHM,J,1/16W	2	
R3353,54	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3356	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3358	ERJ3EKF2870	M 287 OHM, 1/16W	1	
R3359,60	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	
R3361	ERJ3EKF4700	M 470 OHM, 1/16W	1	
R3363	ERJ3EKF5600	M 560 OHM, 1/16W	1	
R3365	ERJ3GEYF5100	M 510 OHM, 1/16W	1	
R3366	ERJ6GEYJ821	M 820 OHM,J,1/10W	1	
R3367	ERJ3EKF1331	M13.3KOHM, 1/16W	1	
R3368	ERJ3GEYJ123	M 12KOHM,J,1/16W	1	
R3369	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R3370	ERJ6GEYJ681	M 680 OHM,J,1/10W	1	
R3371,72	ERJ3GEYJ330	M 33 OHM,J,1/16W	2	
R3373	ERJ6GEYJ331	M 330 OHM,J,1/10W	1	
R3374	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R3375,76	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	
R3377,78	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
R3379	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R3380	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3381	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R3382-84	ERJ3GEY0R00	M 0 OHM, 1/16W	3	
R3385	ERJ3EKF4700	M 470 OHM, 1/16W	1	
R3386,87	ERJ3EKF1401	M 1.4KOHM, 1/16W	2	
R3388,89	ERJ3EKF1001	M 1KOHM, 1/16W	2	
R3390-95	ERJ3EKF33R0	M 33 OHM, 1/16W	6	
R3396	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R3397	ERJ3EKF4700	M 470 OHM, 1/16W	1	
R3398	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R3399-01	ERJ3EKF1500	M 150 OHM, 1/16W	3	
R3402	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3403	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3404	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3405	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3406	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R3407	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3408	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3409	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3410	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3411	EXB38V560J	RESISTOR ARRAY	1	
R3412,13	ERJ3GEY0R00	M 0 OHM, 1/16W	2	
R3414,15	EXB38V560J	RESISTOR ARRAY	2	
R3416-18	ERJ3GEYJ560	M 56 OHM,J,1/16W	3	
R3419,20	ERJ3GEYJ390	M 39 OHM,J,1/16W	2	
R3421,22	ERJ3GEYJ560	M 56 OHM,J,1/16W	2	
R3423	D1HG5608A002	NETWORK RESISTER	1	
R3424	ERJ3GEYJ105	M 1MOHM,J,1/16W	1	
R3425	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3427-29	ERJ3GEY0R00	M 0 OHM, 1/16W	3	
R3431	ERJ3GEYJ182	M 1.8KOHM,J,1/16W	1	
R3432	ERJ3GEY0R00	M 0 OHM, 1/16W	1	

Notes	Exercises	Learning Objectives	*	
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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3434	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3438-40	ERJ3GEYJ220	M 22 OHM,J,1/16W	3	
R3441-43	ERJ3GEYJ331	M 330 OHM,J,1/16W	3	
R3449	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3451-53	ERJ6GEYJ102	M 1KOHM,J,1/10W	3	
R3454-56	ERJ3GEYJ101	M 100 OHM,J,1/16W	3	
R3457-59	ERJ3GEYJ471	M 470 OHM,J,1/16W	3	
R3460-62	ERJ3GEYJ102	M 1KOHM,J,1/16W	3	
R3463	ERJ3GEYJ680	M 68 OHM,J,1/16W	1	
R3465	ERJ3GEYJ680	M 68 OHM,J,1/16W	1	
R3466	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3467	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3468-70	ERJ3GEYJ223	M 22KOHM,J,1/16W	3	
R3471,72	ERJ3EKF1020	M 102 OHM, 1/16W	2	
R3473	ERJ3EKF68R0	M 68 OHM,J,1/16W	1	
R3474	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3475	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3477,78	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3479-81	ERJ3EKF68R0	M 68 OHM,J,1/16W	3	
R3482,83	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	
R3484	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R3485	D1HG6808A002	NETWORK RESISTER	1	
R3486	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R3487	ERJ3GEYJ105	M 1MOHM,J,1/16W	1	
R3488	ERJ3GEYJ184	M 180KOHM,J,1/16W	1	
R3489,90	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3491	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3492	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3493	D1HG6808A002	NETWORK RESISTER	1	
R3498	EXB38V680J	RESISTOR ARRAY	1	
R3499,00	ERJ3EKF68R0	M 68 OHM,J,1/16W	2	
R3501	ERJ3GEYJ510	M 51 OHM,J,1/16W	1	
R3502	ERJ3EKF1500	M 150 OHM, 1/16W	1	
R3503	ERJ3GEYJ510	M 51 OHM,J,1/16W	1	
R3504	ERJ3EKF1020	M 102 OHM, 1/16W	1	
R3505	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3508	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R3509	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3511,12	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3513	D0GB474JA007	M 470KOHM,J,1/16W	1	
R3514	ERJ6GEYJ915	M 9.1MOHM,J,1/10W	1	
R3515	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3516	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3517	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3518	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3519	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3520	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3524	ERJ3GEYJ272	M 2.7KOHM,J,1/16W	1	
R3525,26	D1HG5608A002	NETWORK RESISTER	2	
R3527,28	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3530	ERJ3GEYJ470	M 47 OHM,J,1/16W	1	
R3531	D1HG6808A002	NETWORK RESISTER	1	
R3533	D1HG6808A002	NETWORK RESISTER	1	
R3534,35	EXB38V680J	RESISTOR ARRAY	2	
R3536	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3537-39	ERJ3GEYJ470	M 47 OHM,J,1/16W	3	
R3542	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	

100%	100%	100%	100%	100%
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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3543	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R3544	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3545-49	ERJ3GEY0R00	M 0 OHM, 1/16W	5	
R3551	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3552,53	ERJ3GEYJ223	M 22KOHM,J,1/16W	2	
R3555	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3561	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3562	ERJ3GEYJ222	M 2.2KOHM,J,1/16W	1	
R3563	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R3564	ERJ3EKF2201	M 2.2KOHM, 1/16W	1	
R3565	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R3566,67	ERJ3EKF75R0	M 0.75HM, 1/16W	2	
R3568	ERJ3EKF6200	M 620 OHM, 1/16W	1	
R3569	ERJ3EKF2201	M 2.2KOHM, 1/16W	1	
R3570	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R3571	ERJ3EKF2201	M 2.2KOHM, 1/16W	1	
R3572,73	ERJ3EKF75R0	M 0.75HM, 1/16W	2	
R3574	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R3576	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R3577	ERJ3GEYJ821	M 820 OHM,J,1/16W	1	
R3578	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R3579	ERJ3EKF2201	M 2.2KOHM, 1/16W	1	
R3580	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R3581	ERJ3EKF1500	M 150 OHM, 1/16W	1	
R3582	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3584	ERJ3GEYJ681	M 680 OHM,J,1/16W	1	
R3585	ERJ3EKF1000	M 100 OHM, 1/16W	1	
R3586	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R3587	ERJ3GEYJ560	M 56 OHM,J,1/16W	1	
R3588	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3589,90	EXB38V560J	RESISTOR ARRAY	2	
R3591	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3593	ERJ3GEYJ680	M 68 OHM,J,1/16W	1	
R3594	EXB38V680J	RESISTOR ARRAY	1	
R3596,97	ERJ3GEYJ680	M 68 OHM,J,1/16W	2	
R3598,99	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3600,01	EXB38V560J	RESISTOR ARRAY	2	
R3604	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R3606	ERJ3GEYJ560	M 56 OHM,J,1/16W	1	
R3608	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3609	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3610	ERJ3GEYJ560	M 56 OHM,J,1/16W	1	
R3612-18	ERJ3GEYJ680	M 68 OHM,J,1/16W	7	
R3619-21	D1HG6808A002	NETWORK RESISTER	3	
R3622	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3624	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3627	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3628-31	ERJ3GEYJ680	M 68 OHM,J,1/16W	4	
R3632-34	D1HG6808A002	NETWORK RESISTER	3	
R3635-40	ERJ3GEYJ680	M 68 OHM,J,1/16W	6	
R3641,42	D1HG6808A002	NETWORK RESISTER	2	
R3643,44	EXB38V680J	RESISTOR ARRAY	2	
R3645-47	ERJ3GEY0R00	M 0 OHM, 1/16W	3	
R3648,49	ERJ3GEYJ680	M 68 OHM,J,1/16W	2	
R3650-52	EXB38V680J	RESISTOR ARRAY	3	
R3653	D1HG6808A002	NETWORK RESISTER	1	
R3654	EXB38V680J	RESISTOR ARRAY	1	

1999	2000	2001	2002	2003
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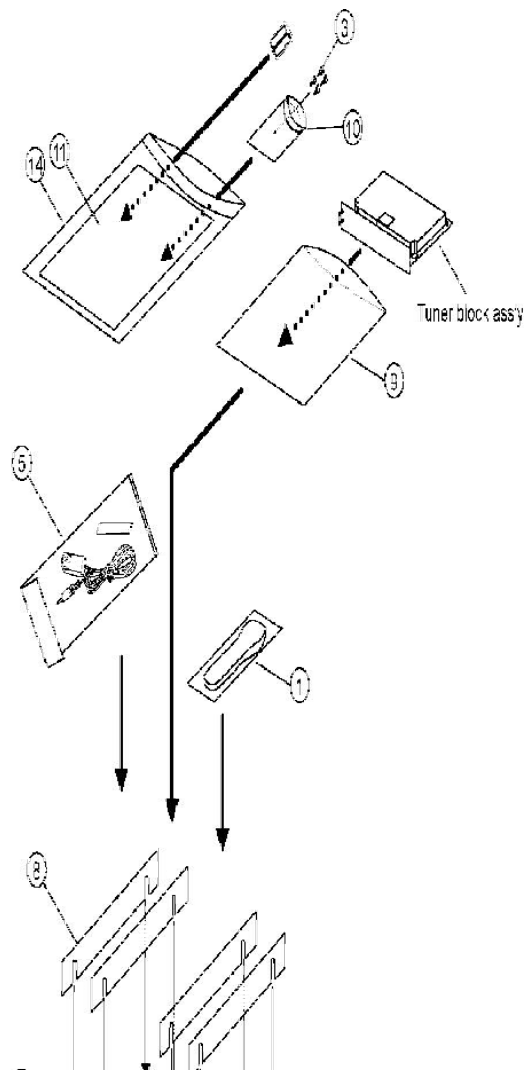
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3655	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3657	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3658-61	ERJ3GEYJ220	M 22 OHM,J,1/16W	4	
R3662	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3663,64	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3665,66	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3667-70	ERJ3GEYJ220	M 22 OHM,J,1/16W	4	
R3671-77	ERJ3GEYJ223	M 22KOHM,J,1/16W	7	
R3678	ERJ3GEYJ683	M 68KOHM,J,1/16W	1	
R3679	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R3680	ERJ3GEYJ683	M 68KOHM,J,1/16W	1	
R3682,83	EXB38V680J	RESISTOR ARRAY	2	
R3684	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3685	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3686	EXB38V680J	RESISTOR ARRAY	1	
R3688-91	ERJ3GEYJ220	M 22 OHM,J,1/16W	4	
R3692	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	1	
R3694	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3697	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3698	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3699	EXB38V680J	RESISTOR ARRAY	1	
R3702	EXB38V680J	RESISTOR ARRAY	1	
R3703	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R3705	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3706	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R3707	EXB38V680J	RESISTOR ARRAY	1	
R3709	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R3710	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3711	EXB38V680J	RESISTOR ARRAY	1	
R3712	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3713	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3714	EXB38V680J	RESISTOR ARRAY	1	
R3715	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3716,17	EXB38V680J	RESISTOR ARRAY	2	
R3721	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3722	ERJ3GEYJ271	M 270 OHM,J,1/16W	1	
R3724	ERJ3GEYJ560	M 56 OHM,J,1/16W	1	
R3725	EXB38V680J	RESISTOR ARRAY	1	
R3726,27	ERJ3GEYJ680	M 68 OHM,J,1/16W	2	
R3728	EXB38V680J	RESISTOR ARRAY	1	
R3729,30	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3731	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3732	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3733,34	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R3735	EXB38V103J	RESISTOR ARRAY	1	
R3736-40	ERJ3GEYJ103	M 10KOHM,J,1/16W	5	
R3741	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	1	
R3742,43	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	
R3744	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R3746	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	
R3747	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3748	EXB38V103J	RESISTOR ARRAY	1	
R3749	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3750	EXB38V103J	RESISTOR ARRAY	1	
R3752	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3754	ERJ3GEY0R00	M 0 OHM, 1/16W	1	
R3758	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3760	ERJ6ENF2001	M 2KOHM, 1/10W	1	
R3762	ERJ6ENF4121	M4.12KOHM, 1/10W	1	
R3763	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R3764	ERJ6ENF8203	M 820KOHM, 1/10W	1	
R3765	ERJ6ENF1372	M13.7KOHM, 1/10W	1	
R3766	ERJ3EKF2492	M24.9KOHM, 1/16W	1	
R3767	ERJ3EKF2372	M23.7KOHM, 1/16W	1	
R3768	ERJ3GEYJ123	M 12KOHM,J,1/16W	1	
R3770	ERJ3GEYJ202	M 2KOHM,J,1/16W	1	
R3771	ERJ3EKF9102	M91.0KOHM, 1/16W	1	
R3772	ERJ3EKF7152	M71.5KOHM, 1/16W	1	
RTL	TXNHCA10YJT	TUNER BLOCK ASSY	1	
TU3300	ENG39A10GF	ENG39A10GF	1	
X3300	H0J184500020	CRYSTAL	1	
X3301	H0J202500002	CRYSTAL	1	
X3302	H0J600400006	CRYSTAL	1	
X3303	H0J367200001	CRYSTAL	1	

9.3. Mechanical Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
<u>1</u>	N2QAYB000020	REMOTE CONTROL	1	
<u>2</u>	TBMU634	TUNER TERMINAL SHEET	1	
<u>3</u>	THEL0239	SCREW FOR INSTALLATION	4	
<u>4</u>	THEL027N	SCREW FOR SHIELD PLATE	4	
<u>5</u>	TNQX016	IR SYSTEM CABLE	1	K2ZZ02C00006
<u>6</u>	TPCB06810	CARTON BOX	1	
<u>7</u>	TPDF1137	PARTITION	2	
<u>8</u>	TPDF1193	PARTITION B	4	
<u>9</u>	TPEH161	AIR MAT	1	
<u>10</u>	TQE6691	POLY BAG FOR SCREW	1	
<u>11</u>	TQZH752	INSTRUCTION BOOK	1	
<u>12</u>	XTV3+10JFJ	SCREW FOR AV TERMINAL	3	
<u>13</u>	XYN3+C6FJ	SCREW(TUNER)	1	
<u>14</u>	XZBT6506	POLY BAG FOR O/I BOOK	1	

9.4. Parts Location (1)



9.5. Parts Location (2)









8 Block and Schematic Diagram

8.1. Schematic Diagram Notes

Important Safety Notice

Components identified by \triangle mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Notes:

1. **Resistor**
Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
2. **Capacitor**
Unit of capacitance is μ F, unless otherwise noted.
3. Coil
Unit of inductance is H, unless otherwise noted.
4. Test Point
 : Test Point position
5. Earth Symbol
 : Chassis Earth (Cold)  : Line Earth (Hot)
6. Voltage Measurement
Voltage is measured by a DC voltmeter.
Conditions of the measurement are the following:
Receiving Signal Colour Bar signal
All customer's controls Maximum positions
7. When arrow mark () is found, connection is easily found from the direction of arrow.
8. Indicates the major signal flow. : Video  Audio 
9. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.

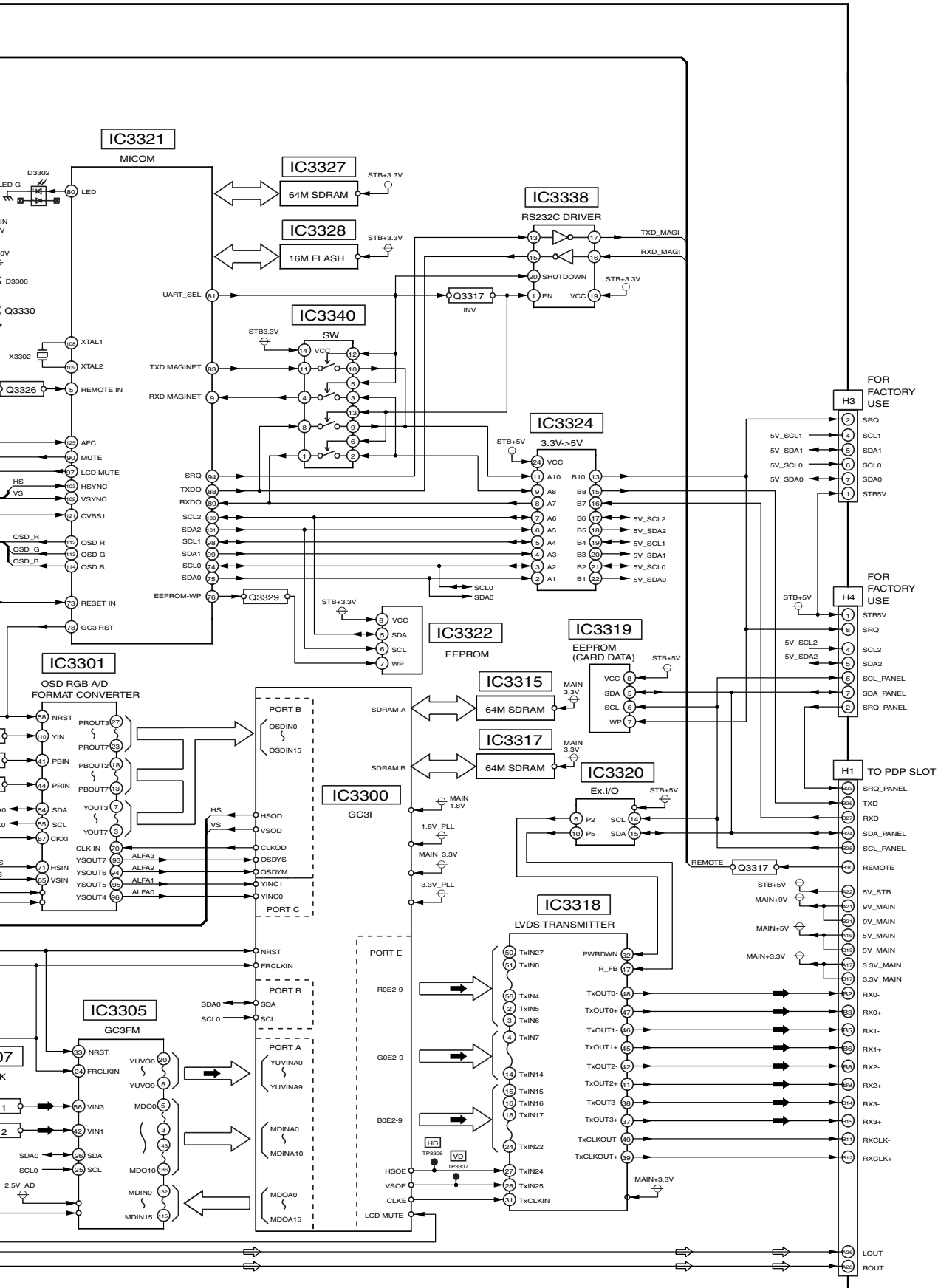
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.

All circuits, except the Power Circuit, are cold.

Precautions

- a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
- b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
- c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
- d. Make sure to disconnect the power plug before removing the chassis.





TY-FB8TA HCA-Board Block Diagram

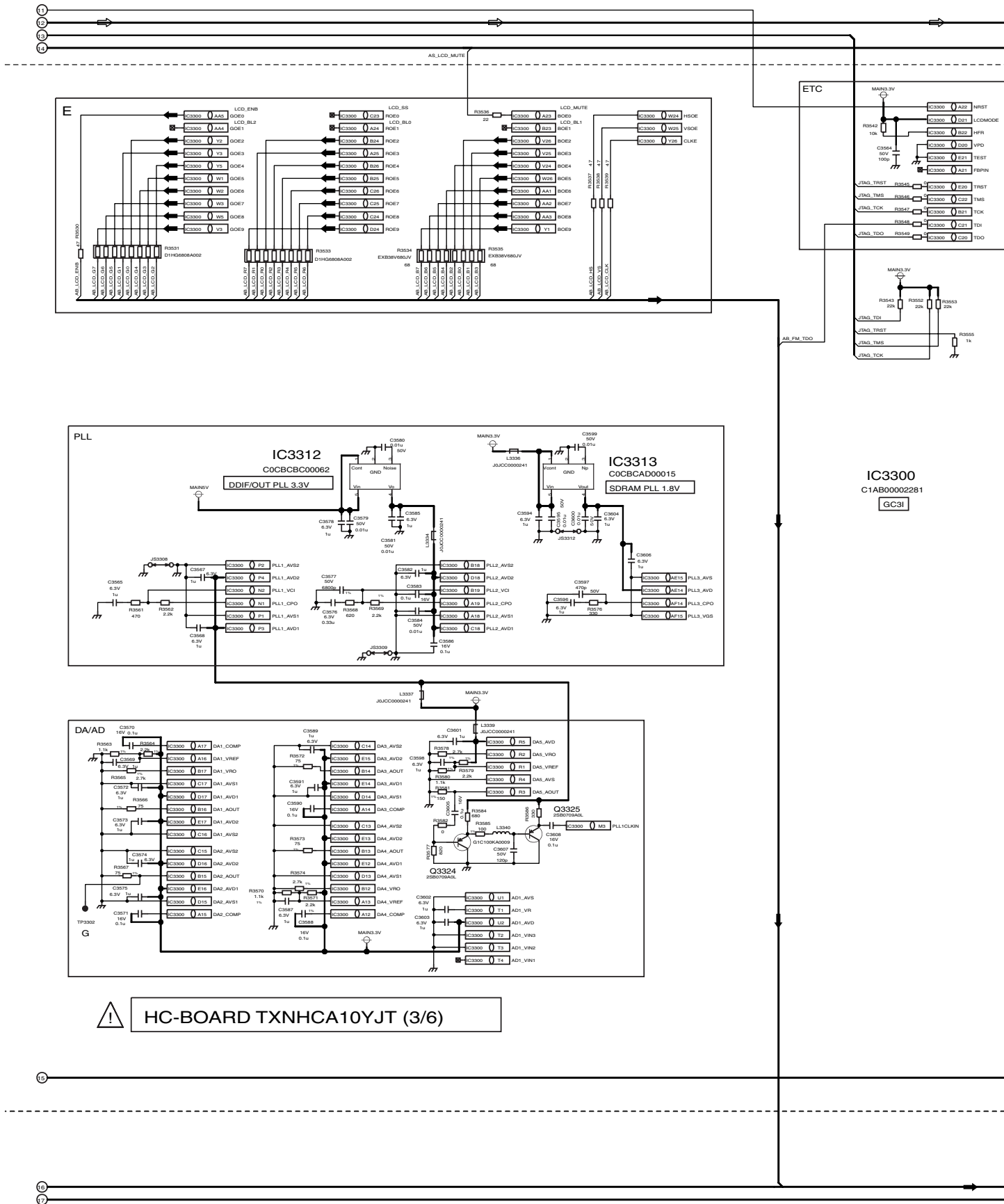


TY-FB8TA HCA-Board (1 of 6) Schematic Diagram



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8.5. HCA-Board (3 of 6) Schematic Diagram



! HC-BOARD TXNHCA10YJT (3/6)

TY-FB8TA HCA-Board (3 of 6) Schematic Diagram

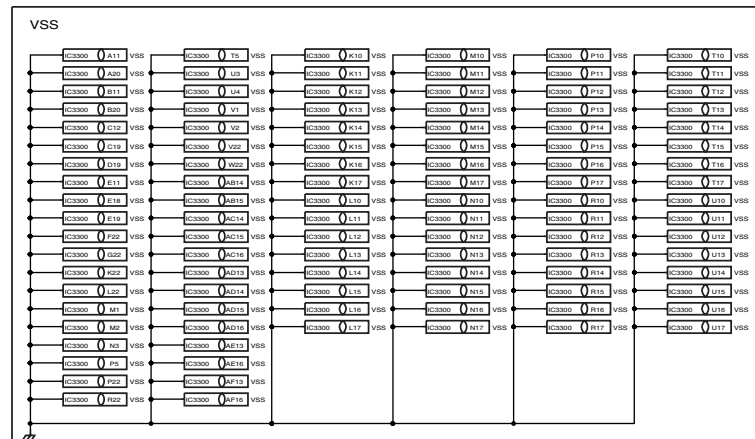
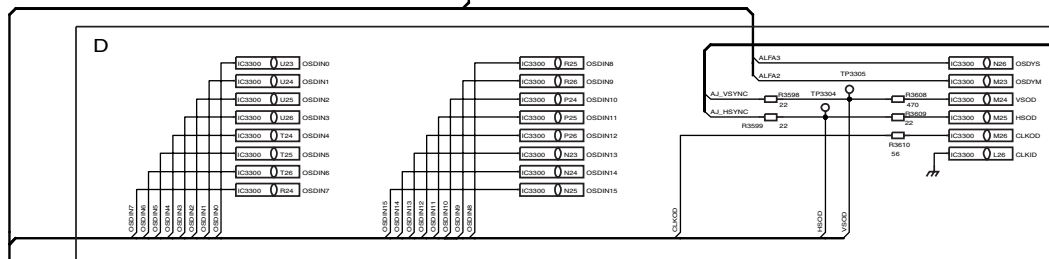
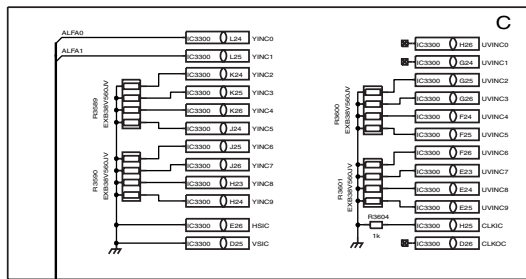
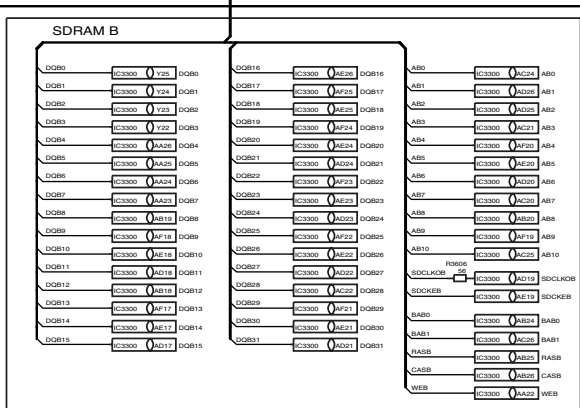
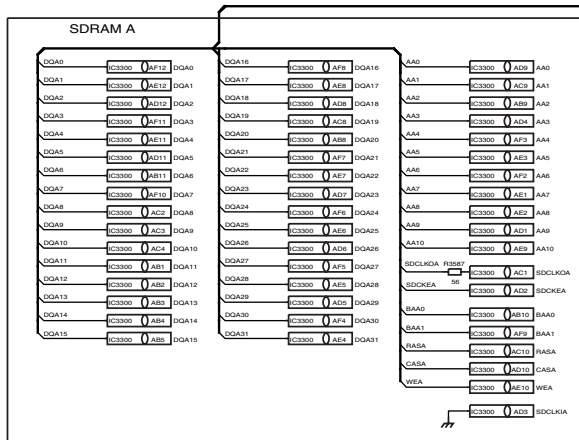
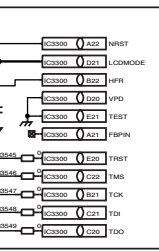
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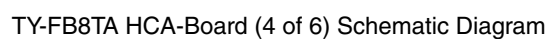
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23



TY-FB8TA HCA-Board (3 of 6) Schematic Diagram

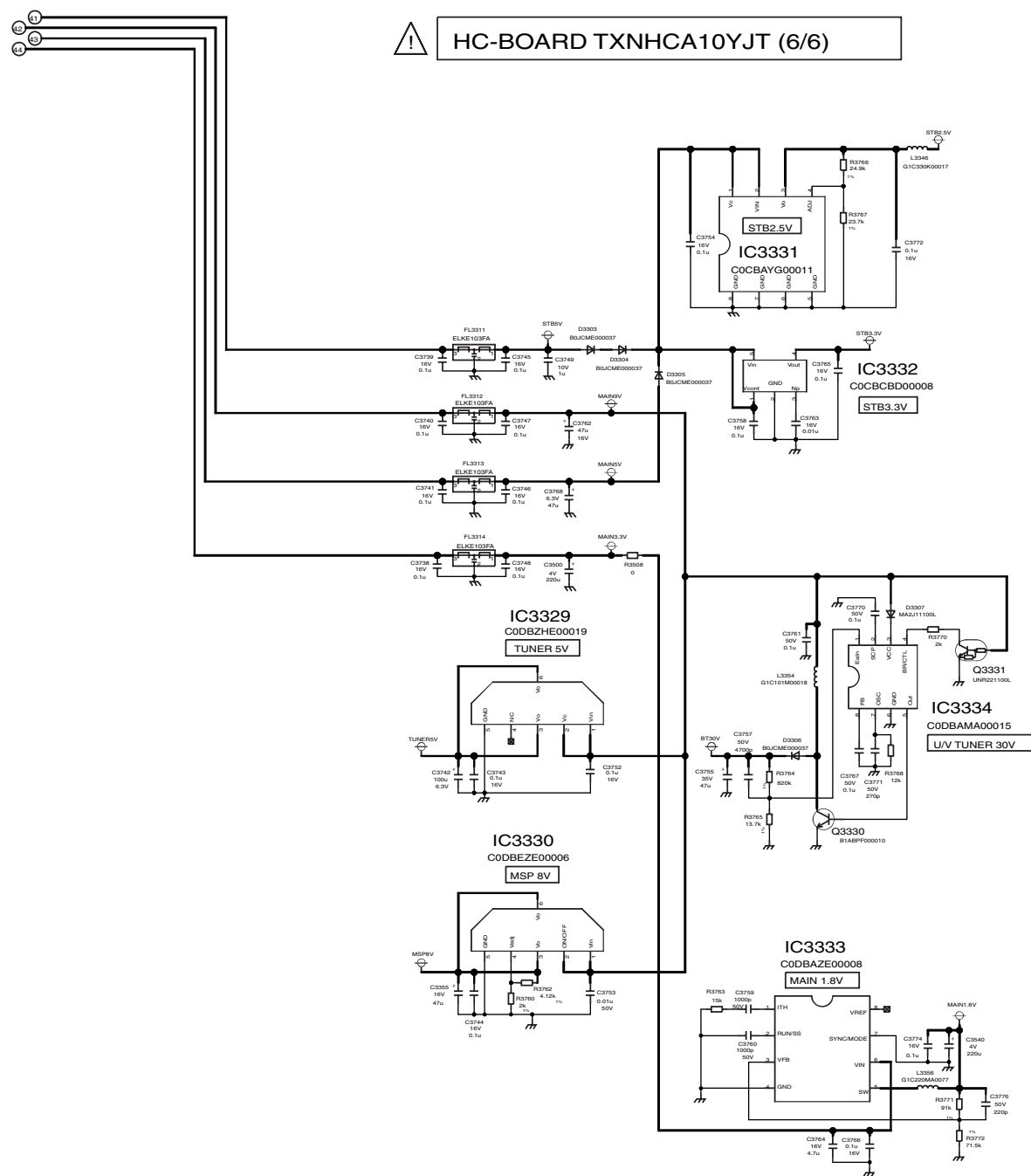






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8.8. HCA-Board (6 of 6) Schematic Diagram



TY-FB8TA HCA-Board (6 of 6) Schematic Diagram



TY-FB8TA HCA-Board (6 of 6) Schematic Diagram

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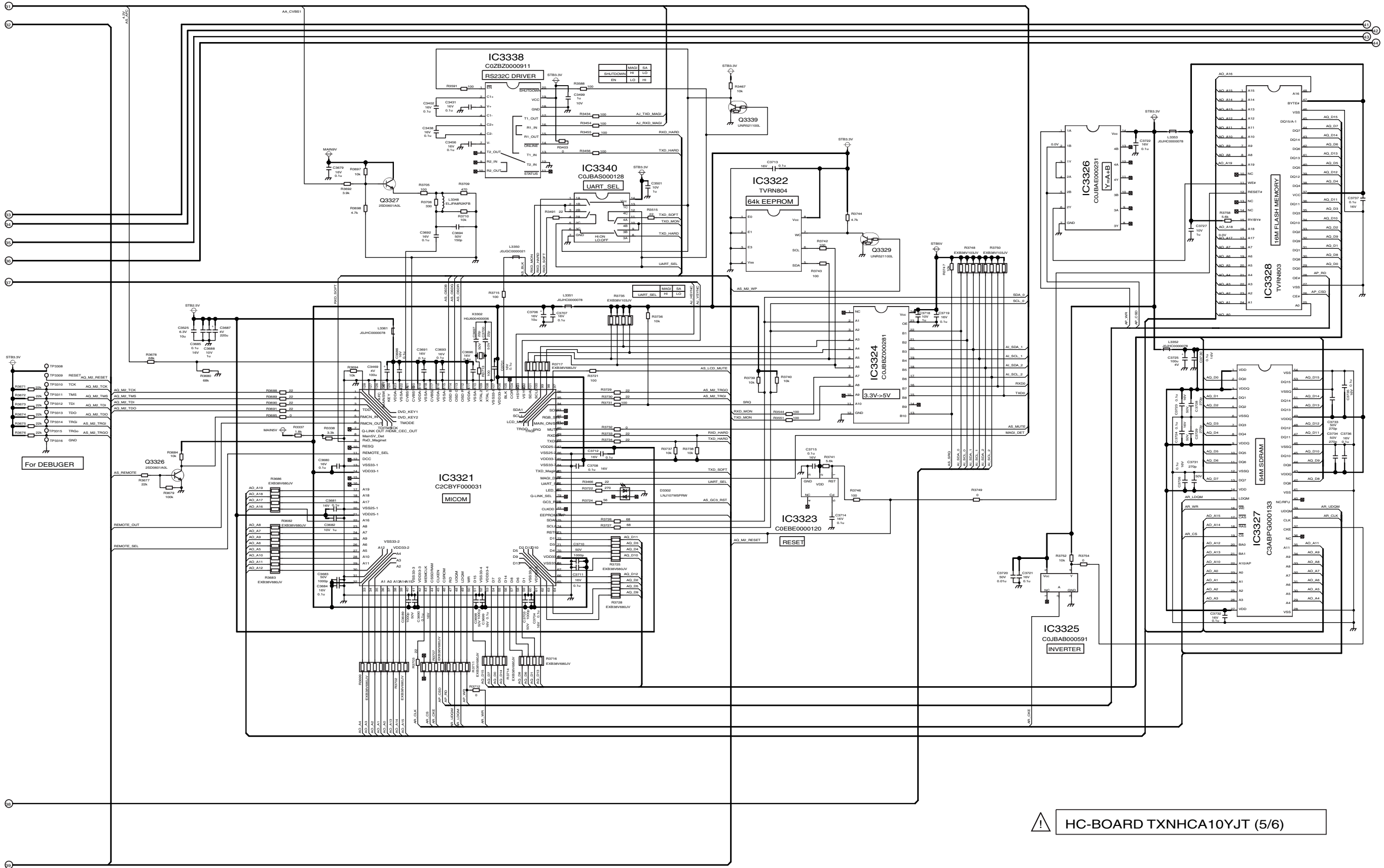
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52

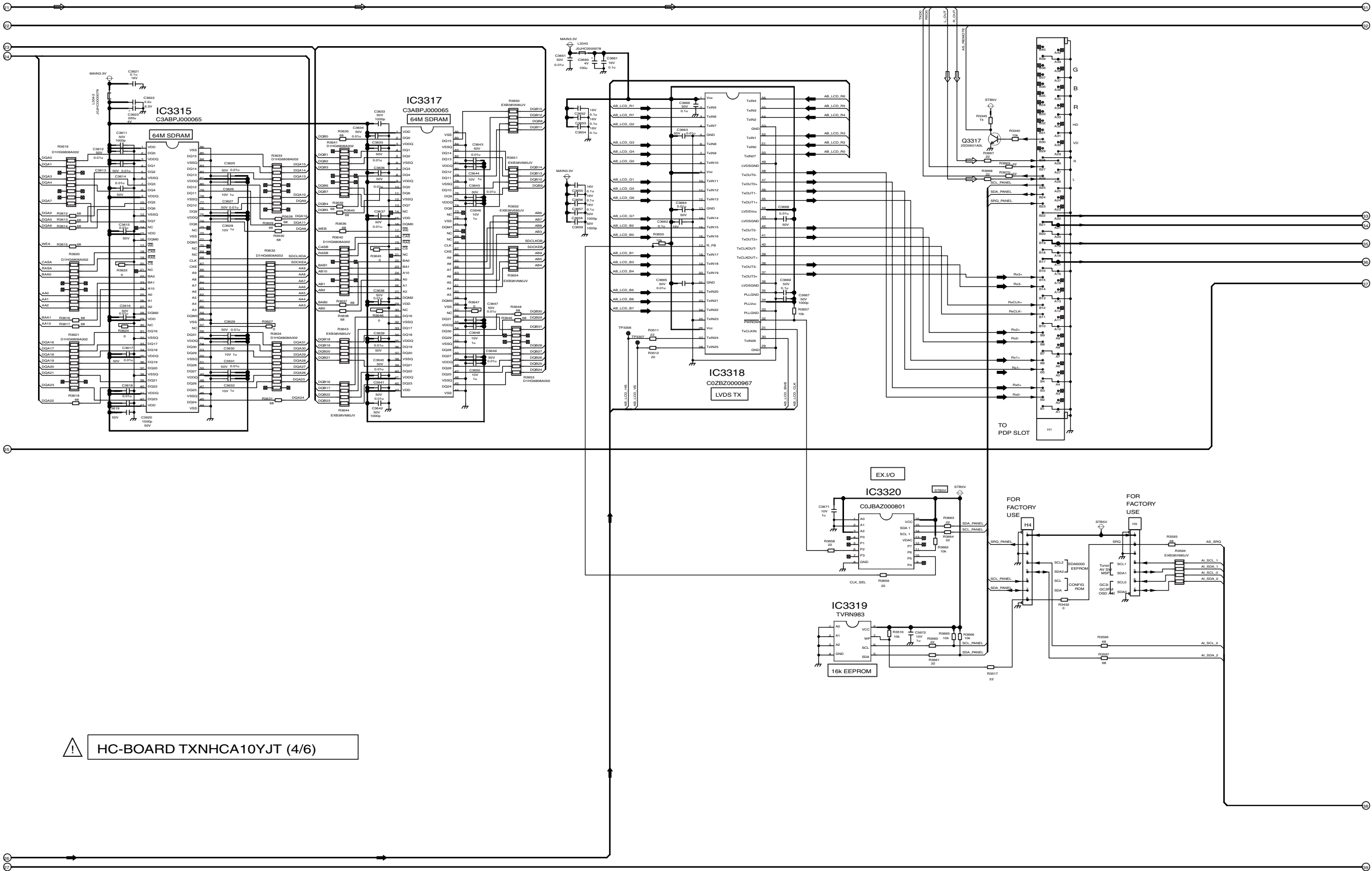
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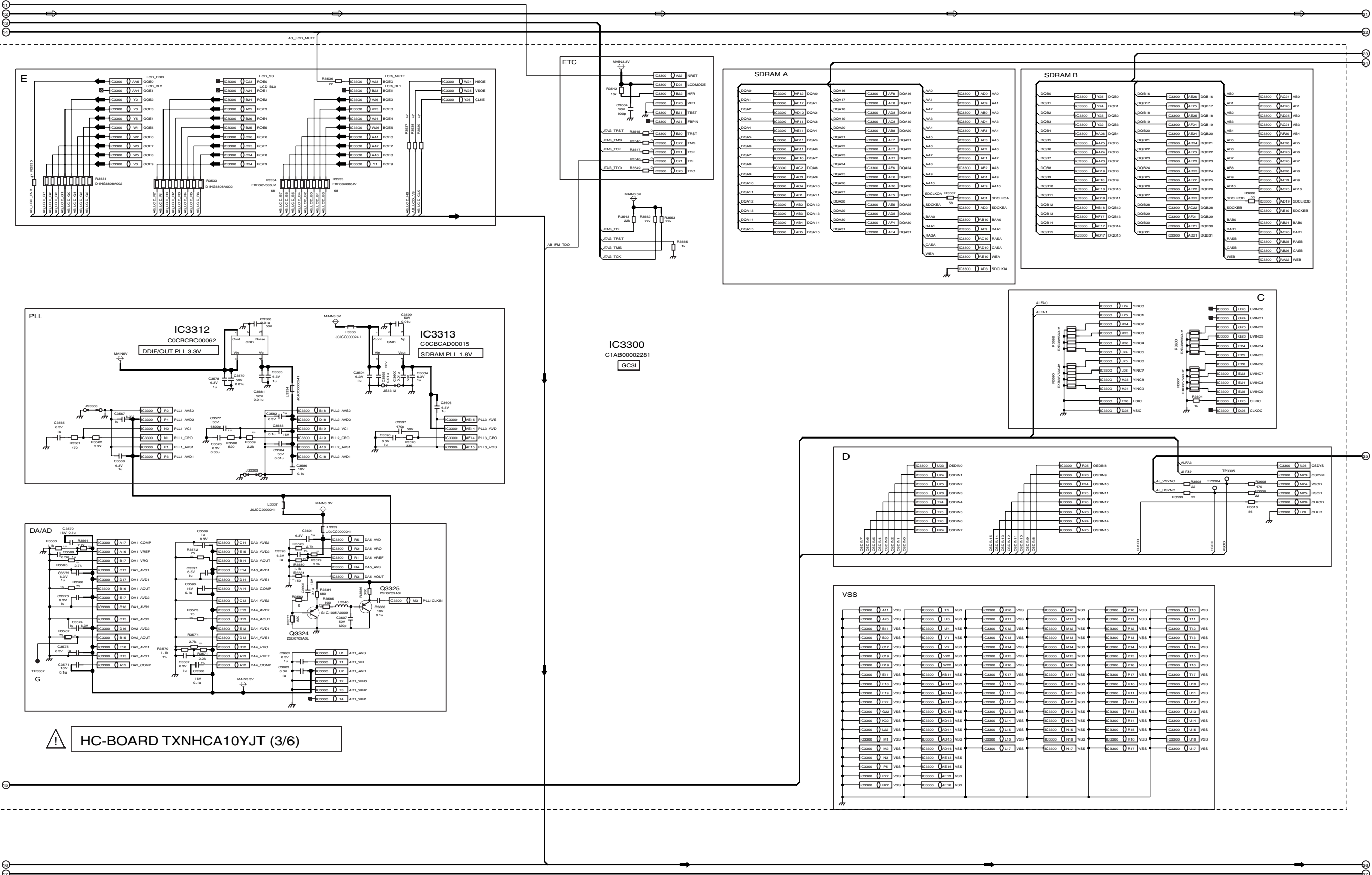
54





HC-BOARD TXNHCA10YJT (5/6)





TY-FB8TA HCA-Board (3 of 6) Schematic Diagram

A

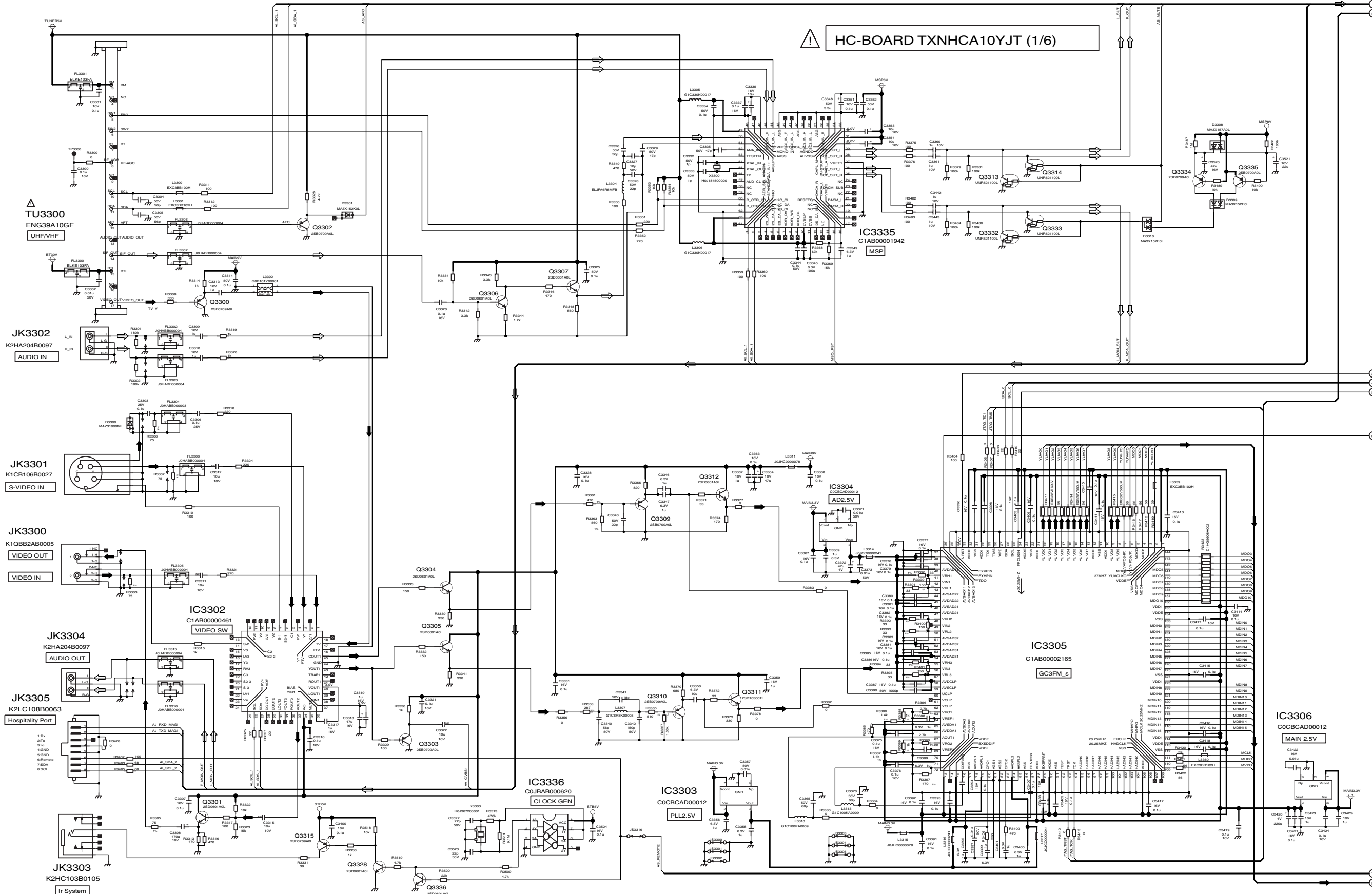
B

C

D

E

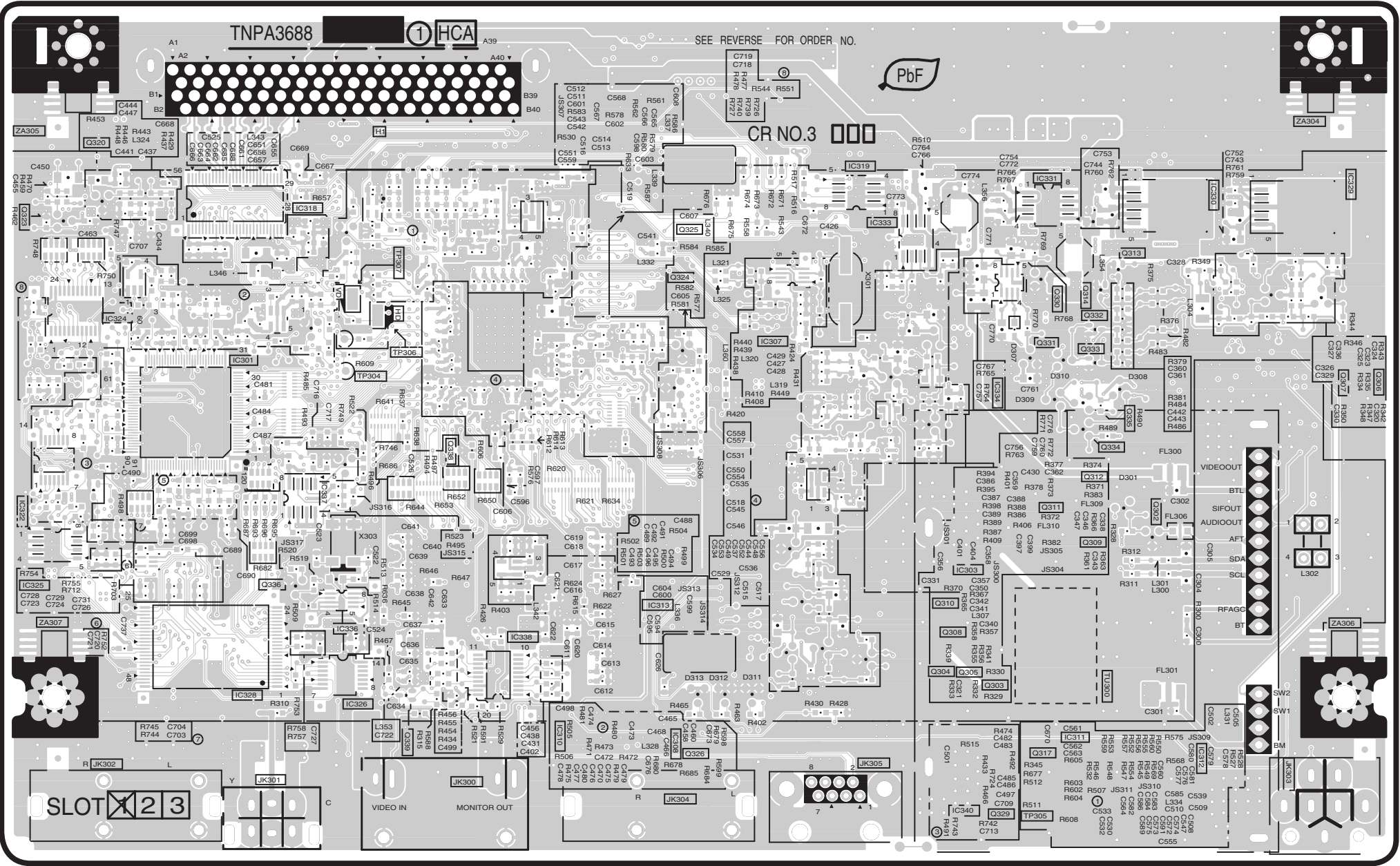
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TY-FB8TA HCA-Board (1 of 6) Schematic Diagram

TY-FB8TA HCA-Board (1 of 6) Schematic Diagram

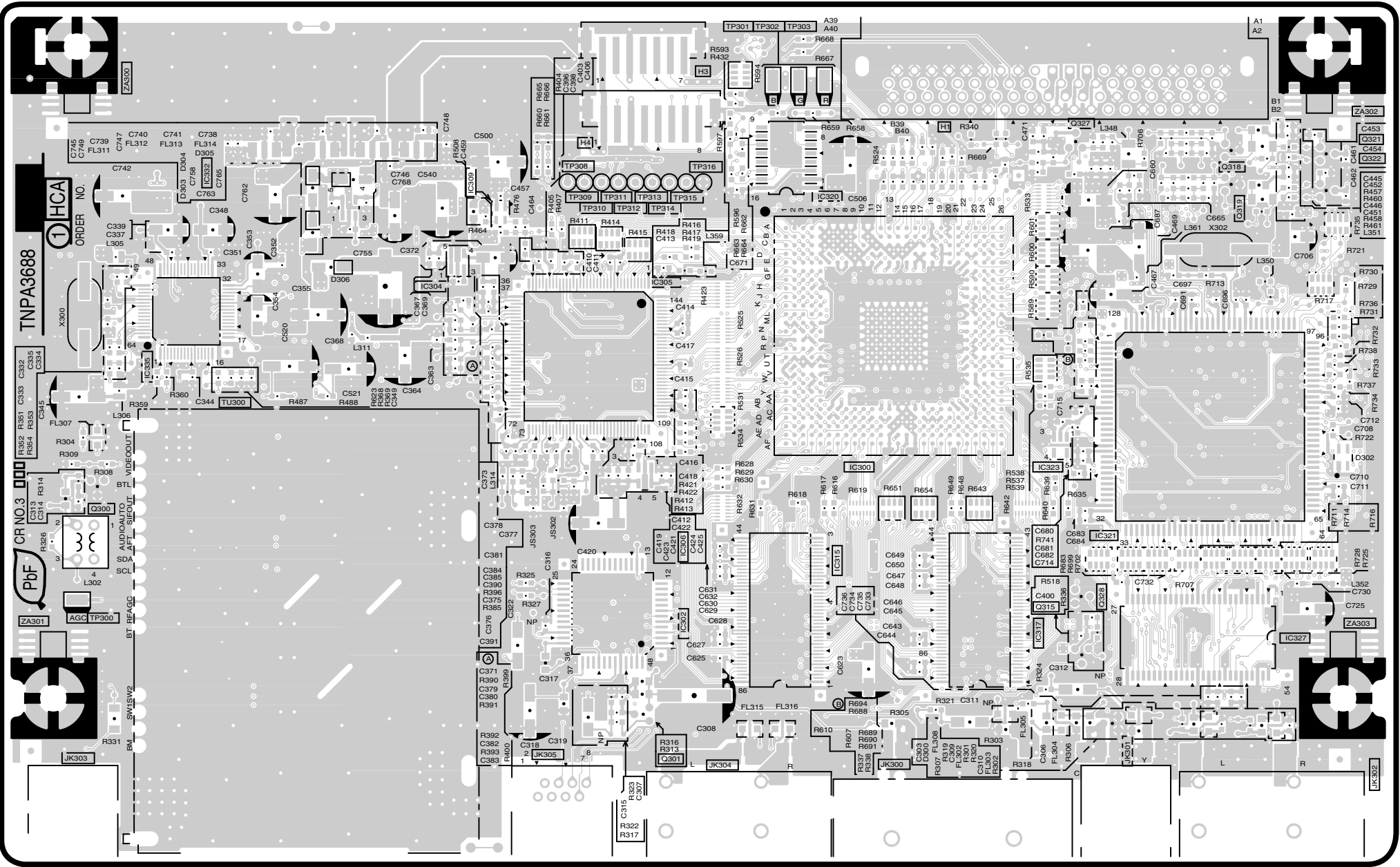
HCA-BOARD (FOIL SIDE)
TXNHCA10YJT



Parts Location

HCA-BOARD	
IC	
IC3312	G-1
IC3313	D-2
IC3318	B-4
IC3319	E-4
IC3322	A-3
IC3324	A-4
IC3325	A-2
IC3326	C-2
IC3328	B-2
IC3329	G-4
IC3330	G-4
IC3331	F-4
IC3333	E-4
IC3334	F-3
IC3336	C-2
IC3337	B-3
IC3338	C-2
IC3340	E-1
TRANSISTOR	
Q3302	F-3
Q3303	F-2
Q3304	E-2
Q3305	F-2
Q3306	G-3
Q3307	G-3
Q3308	E-2
Q3309	F-3
Q3310	E-2
Q3311	F-3
Q3312	F-3
Q3313	F-4
Q3314	F-4
Q3317	F-2
Q3320	A-4
Q3323	A-4
Q3324	D-4
Q3325	D-4
Q3326	D-2
Q3329	F-1
Q3330	F-4
Q3331	F-3
Q3332	F-4
Q3333	F-3
Q3334	F-3
Q3335	F-3
Q3336	B-2
Q3338	C-3
Q3339	C-2
TP	
TP3304	C-3
TP3305	F-1
TP3306	C-3
TP3307	C-4

HCA-BOARD (COMPONENT SIDE)
TXNHCA10YJT



Parts Location

HCA-BOARD	
IC	
IC3300	E-3
IC3302	D-2
IC3304	C-4
IC3305	D-4
IC3306	D-2
IC3309	C-4
IC3315	E-2
IC3317	F-2
IC3320	E-4
IC3321	F-3
IC3323	F-3
IC3327	G-2
IC3332	B-4
IC3335	B-3
TRANSISTOR	
Q3300	A-3
Q3301	D-1
Q3315	F-2
Q3318	G-4
Q3319	G-4
Q3321	G-4
Q3322	G-4
Q3327	F-5
Q3328	F-2
TP	
TP3300	A-2
TP3301	D-5
TP3302	E-5
TP3303	E-5
TP3308	D-4
TP3309	D-4
TP3310	D-4
TP3311	D-4
TP3312	D-4
TP3313	D-4
TP3314	D-4
TP3315	D-4
TP3316	D-4

